The Challenge of Future Food Production

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The food price spikes in the first half of 2008 and in 2010/11 have raised concerns about the global supply of food in the future. In this contribution I will give some historical perspectives and then quantify possible future demands in terms of food, feed and feedstock. Next, an analysis is given of the technical potentials of global food and feed production. Factors that may theoretically lift these potentials will be briefly mentioned. However, diminishing returns, rising input prices and handicaps of less-favoured areas will make the world food economy run up against a ceiling long before the technical potential has been realized. Based on an analysis of the literature it is argued that if the long-term price decline of food in the 20th century were indeed to change, short time horizons of private and public actors pose special risk because these may prevent timely investment in increasing the world’s capacity for food production. Governments have a number of options to mitigate this risk by influencing the supply and demand for farm products, investing in research and infrastructure, and reducing the price instability in agricultural markets. Specific items determining future food, feed and feedstock production capabilities such as yield gaps, resource scarcity and use efficiency, climate change and biofuel production (including additional claims on vegetable oils) will be considered.